



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,375	02/27/2004	Yuriko Kaida	249262US0CONT	7968
22850	7590	08/25/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			SADULA, JENNIFER R	
			ART UNIT	PAPER NUMBER

1756

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/787,375	Applicant(s) KAIDA ET AL.	
	Examiner Jennifer R. Sadula	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/27/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 2/27/04 has been considered by the examiner. However, the examiner wishes to note that these references merely submitted without even English translations of an abstract have only been considered on the merits of that which was in English and no more.

Specification

The abstract of the disclosure is objected to because the abstract is too long. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Morikawa et al., U.S. Patent No. 5,644,416 (“Morikawa”).

Applicants claim an optical recording material comprising a side-chain polymer liquid crystal (PLC) containing an electrocyclic-reaction-type photochromic compound. It is clear to the Examiner that the photochromic compound need only be in the optical recording material and is not **necessarily** attached to the side-chain PLC. Applicants

Art Unit: 1756

define the phrase "electrocyclic-reaction-type" as meaning any compound which, "undergoes structural changes with the ring-closure/ring-opening of the molecule thereof by a photoreaction" (Applicants' specification- p6). Isomerization is used as an example of such a "structural change".

Morikawa teaches light modulation devices comprising an optical memory material which can be read in a non-destructive manner and is excellent in durability and stability (2:52-58) and a method of reading the same. Morikawa teaches that such is accomplished by utilizing a highly polymeric liquid crystal film comprising a uniaxially orientated side chain type PLC containing a photochromic compound that undergoes a change in refractive index anisotropy induced by a photochromic reaction of the photochromic compound (2:59-67). The photochromic compound may be covalently bound to the side-chain or dispersed in the side-chain compound (4:28-36). With regard to claims 3-5, Morikawa teaches the photochromic material be a diarylethylene derivative (6:60-67) having a polymerizable group as shown in column 7. With regard to claim 8 the change occurs near a clearing point temperature of the PLC (see examples. With regard to claim 9 the material is photoisomerized- therefore it has been irradiated with light as specified. With regard to claim 10 the change in orientation occurs at a temperature less than the T_g (10:35-52).

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Tatezono et al., U.S. Patent No. 5,281,501 ("Tatezono").

Tatezono teaches a method of recording and reproducing for an optical recording medium comprising a photochromic material and a polymer which are so combined with

Art Unit: 1756

each other that a photostationary state attained upon irradiation with light of a specific wavelength is varied with temperature and a step of applying the light of a specific wavelength to the heated recording layer for bringing the same into a state and recording information (abstract). The intent is to provide for a device having sensitivity to a band of long wavelengths which can perform a nondestructive readout operation similar to that as detailed in the Applicants' specification (2:45-63). Diarylethylen derivatives are preferred (2:37-41 and 3:30-39). The heating step is application of light (4:18-22).

The optical recording medium having temperature dependency may be provided with the aforementioned properties, while a nondestructive readout operation-can be performed also when the medium contains a photochromic material which causes reversible reaction, such as geometrical isomerization reaction. According to Tatzono, the photochromic material and the polymer may be contained in the recording layer as a mixture. Alternatively, the photochromic material may be contained as a side chain of the polymer (10:66-11:4). The methods are further detailed beginning in column 17 and the ring-closure stability is detailed in 7:58-60 and 10:32-46.

Claims 1-5 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Tachibana et al., U.S. Patent No. 5,529,864 ("Tachibana").

Tachibana teaches an optical recording medium utilizing a side-chain PLC and a photochromic compound wherein the photochromic compound is preferably diarylethylene compounds (2:28-35 and 56-64). The photochromic material may be covalently bound to the PLC (2:47-55). Operation for this device is detailed in column 3 and in the examples and it is noteworthy that it is photo-isomerizable materials.

Art Unit: 1756

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kozlovski et al., U.S. Patent No. 6,133,390 teaches sidechain polymeric materials utilizing photochromic polymers that are photoisomerizable (abstract).

Minabe et al., U.S. Patent No. 6,512,085 and Yamamoto et al., U.S. Patent No 6,650,615 teach the compounds and methods as specified.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer R. Sadula whose telephone number is 571.272.1391. The examiner can normally be reached on Monday through Friday, 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F. Huff can be reached on 571.272.1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRS
8/22/04


SHEAN C. WU
PRIMARY EXAMINER